

## WEST Search History

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DATE: Wednesday, November 01, 2006

Hide?	<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>
		<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L3	(isophorone or phorenol or 4s-4-hydroxy-2,6,6-trimethyl-2-cyclohexene-1-one) same L2	3
<input type="checkbox"/>	L2	(ketoisophorone or (2,6,6-trimethyl-2-cyclohexene-1,4-dione)) same L1	6
<input type="checkbox"/>	L1	(levodione adj reductase)	18

END OF SEARCH HISTORY

STN SEARCH

#10/519,969

11/01/2006

=> index bioscience medicine

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE, AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS, CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB, DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 13:34:19 ON 01 NOV 2006

71 FILES IN THE FILE LIST IN STNINDEX

=> S (levodione(w)reductase)

4 FILE BIOENG  
9 FILE BIOSIS  
7 FILE BIOTECHABS  
7 FILE BIOTECHDS  
3 FILE BIOTECHNO  
2 FILE CABA  
8 FILE CAPLUS  
31 FILE DGENE  
4 FILE EMBASE  
4 FILE ESBIODASE  
3 FILE FROSTI  
27 FILE GENBANK  
7 FILE IFIPAT  
1 FILE JICST-EPLUS  
41 FILES SEARCHED...  
5 FILE LIFESCI  
5 FILE MEDLINE  
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11 FILE SCISEARCH  
1 FILE TOXCENTER  
6 FILE USPATFULL  
2 FILE USPAT2  
4 FILE WPIDS  
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23 FILES HAVE ONE OR MORE ANSWERS, 71 FILES SEARCHED IN STNINDEX

L1 QUE (LEVODIONE(W) REDUCTASE)

=> d rank

F1 31 DGENE  
F2 27 GENBANK  
F3 11 SCISEARCH  
F4 9 BIOSIS  
F5 8 CAPLUS  
F6 7 BIOTECHABS  
F7 7 BIOTECHDS  
F8 7 IFIPAT  
F9 6 USPATFULL  
F10 5 LIFESCI  
F11 5 MEDLINE  
F12 4 BIOENG  
F13 4 EMBASE  
F14 4 ESBIODASE  
F15 4 WPIDS  
F16 4 WPINDEX  
F17 3 BIOTECHNO  
F18 3 FROSTI  
F19 3 PASCAL  
F20 2 CABA  
F21 2 USPAT2  
F22 1 JICST-EPLUS  
F23 1 TOXCENTER

=> file f3-f15

FILE 'SCISEARCH' ENTERED AT 13:36:40 ON 01 NOV 2006

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FILE 'BIOTECHABS' ACCESS NOT AUTHORIZED

FILE 'BIOTECHDS' ENTERED AT 13:36:40 ON 01 NOV 2006

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FILE 'IFIPAT' ENTERED AT 13:36:40 ON 01 NOV 2006

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=> S L1

L2 74 L1

=> S (ketoisophorone or 2,6,6-trimethyl-2-cyclohexene-1,4-dione) (s) L2

9 FILES SEARCHED...

L3 11 (KETOISOPHORONE OR 2,6,6-TRIMETHYL-2-CYCLOHEXENE-1,4-DIONE) (S)  
L2

=> S (isophorone or phorenol or 4s-4-hydroxy-2,6,6-trimethyl-2-cyclohexene-1-one) (s) L3

L4 6 (ISOPHORONE OR PHORENOL OR 4S-4-HYDROXY-2,6,6-TRIMETHYL-2-CYCLOHEXENE-1-ONE) (S) L3

=> dup rem L3

PROCESSING COMPLETED FOR L3

L5 5 DUP REM L3 (6 DUPLICATES REMOVED)

=> dup rem L4

PROCESSING COMPLETED FOR L4

L6 3 DUP REM L4 (3 DUPLICATES REMOVED)

=> d ibih abs L5 1-5

L5 ANSWER 1 OF 5 IFIPAT COPYRIGHT 2006 IFI on STN DUPLICATE 1

AN 11172553 IFIPAT:IFIUDB;IFICDB <<LOGINID::20061101>>

TITLE: PROCESS FOR ACTINOL PRODUCTION FROM KETOISOPHORONE

INVENTOR(S): Hoshino; Tatsuo, Kanagawa, JP

Setoguchi; Yutaka, Kanagawa, JP

Shimizu; Sakayu, Kyoto, JP

Tabata; Kazuyuki, Kanagawa, JP

PATENT ASSIGNEE(S): Unassigned

AGENT: Stephen M Haracz; Bryan Cave, 1290 Avenue of the Americas, New York, NY, 10104, US

NUMBER	PK	DATE
-----		
PATENT INFORMATION:	US 2006121587	A1 20060608
APPLICATION INFORMATION:	US 2003-528843	20030916
	WO 2003-EP10295	20030916
	20060123	PCT 371 date
	20060123	PCT 102(e) date

NUMBER	DATE
-----	
PRIORITY APPLN. INFO.:	EP 2002-216057 20020927
FAMILY INFORMATION:	US 2006121587 20060608
DOCUMENT TYPE:	Utility
	Patent Application - First Publication
FILE SEGMENT:	CHEMICAL
	APPLICATION

NUMBER OF CLAIMS: 11

AB Disclosed is a process for producing actinol from \*\*\*ketoisophorone\*\*\* which comprises contacting \*\*\*ketoisophorone\*\*\* with a recombinant microorganism or cell-free extract thereof in a reaction mixture, wherein said recombinant microorganism is obtainable by transforming a host microorganism, e.g. selected from the group consisting of microorganisms of the genera *Saccharomyces*, *Zygosaccharomyces*, and *Candida*, such as commercially available baker's yeast, *Saccharomyces cerevisiae* ATCC7754, *Saccharomyces rouxii* (*Zygosaccharomyces rouxii*) HUT7191 (IFO 0494), *Saccharomyces delbrueckii* HUT7116 (*Saccharomyces unisporus* IFO 0298), *Saccharomyces delbrueckii* (*Torulaspora delbrueckii*) HUT7102, *Saccharomyces willianus* HU7106, *Zygosaccharomyces bailii* ATCC11486, *Candida tropicalis* IFO 1403, and a mutant thereof, which is capable of reducing \*\*\*ketoisophorone\*\*\* to levodione with a \*\*\*levodione\*\*\* \*\*\*reductase\*\*\* gene, e.g. a \*\*\*levodione\*\*\* \*\*\*reductase\*\*\* gene derived from a microorganism belonging to the genus *Corynebacterium*, such as *C. aquaticum* AKU611 (FERM BP6448) or a mutant thereof, and isolating the produced actinol from the reaction mixture.

CLMN 11

L5 ANSWER 2 OF 5 IFIPAT COPYRIGHT 2006 IFI on STN DUPLICATE 2  
 AN 11172552 IFIPAT;IFIUDB;IFICDB <<LOGINID::20061101>>  
 TITLE: PROCESS FOR PRODUCING PHORENOL  
 INVENTOR(S): Hoshino; Tatsuo, 2-18-14 FUETA, KAMAKURA-SHI,  
 KANAGAWA, 2480027, JP  
 Setoguchi; Yutaka, Kanagawa-ken, JP  
 Shimizu; Sakayu, Kyoto-fu, JP  
 Tabata; Kazuyuki, Kanagawa-ken, JP  
 PATENT ASSIGNEE(S): Unassigned  
 AGENT: Stephen M Haracz; Bryan Cave, 1290 Avenue of the  
 Americas, New York, NY, 10104, US

NUMBER	PK	DATE
-----		
PATENT INFORMATION:	US 2006121586	A1 20060608
APPLICATION INFORMATION:	US 2003-519969	20030509
	WO 2003-EP4893	20030509
	20050930	PCT 371 date
	20050930	PCT 102(e) date

NUMBER	DATE
-----	
PRIORITY APPLN. INFO.:	EP 2002-147849 20020704
FAMILY INFORMATION:	US 2006121586 20060608
DOCUMENT TYPE:	Utility
	Patent Application - First Publication
FILE SEGMENT:	CHEMICAL
	APPLICATION

NUMBER OF CLAIMS: 21

AB The present invention relates to processes for producing (4S)-4hydroxy-2,6,6-trimethyl-2-cyclohexene-1-one (phorenol) from

\*\*\*2\*\*\*, \*\*\*6\*\*\*, \*\*\*6\*\*\* - \*\*\*trimethyl\*\*\* - \*\*\*2\*\*\* -  
 \*\*\*cyclohexene\*\*\* - \*\*\*1\*\*\*, \*\*\*4\*\*\* - \*\*\*dione\*\*\* (  
 \*\*\*ketoisophorone\*\*\*). The present invention also relates to products  
 useful for producing phorenol from \*\*\*ketoisophorone\*\*\*, including  
 microorganisms, cellfree extracts of such microorganisms, recombinant  
 microorganisms, cell-free extracts of such recombinant microorganisms,  
 and enzymes (e.g., \*\*\*levodione\*\*\* \*\*reductase\*\*\*). Processes  
 for producing phorenol from \*\*\*ketoisophorone\*\*\* using such products  
 are also provided.

CLMN 21

L5 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 3

ACCESSION NUMBER: 2004:287922 CAPLUS <<LOGINID::20061101>>

DOCUMENT NUMBER: 140:302437

TITLE: One step process for the reduction of ketoisophorone  
 to actinol by recombinant *Saccharomyces cerevisiae*

INVENTOR(S): Hoshino, Tatsuo; Setoguchi, Yutaka

PATENT ASSIGNEE(S): DSM Ip Assets B.V., Neth.

SOURCE: PCT Int. Appl., 15 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004029263	A2	20040408	WO 2003-EPI0295	20030916
WO 2004029263	A3	20040527		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG AU 2003273889 A1 20040419 AU 2003-273889 20030916 EP 1543134 A2 20050622 EP 2003-757854 20030916 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK JP 2006500047 T2 20060105 JP 2004-538915 20030916 US 2006121587 A1 20060608 US 2006-528843 20060123 PRIORITY APPLN. INFO.: EP 2002-21605 A 20020927 WO 2003-EPI0295 W 20030916				

OTHER SOURCE(S): CASREACT 140:302437

AB A process is provided for producing actinol from \*\*\*ketoisophorone\*\*\*  
 which comprises contacting \*\*\*ketoisophorone\*\*\* with whole cells or a  
 cell free ext. of A recombinant microorganism that possesses a  
 \*\*\*ketoisophorone\*\*\* reductase and expresses a cloned \*\*\*levodione\*\*\*  
 \*\*\*reductase\*\*\*. Suitable recombinant hosts may be selected from the  
 group consisting of microorganisms of the genera *Saccharomyces*,  
*Zygosaccharomyces*, and *Candida*. Specifically, com. available baker's  
 yeast, *Saccharomyces cerevisiae* ATCC 7754, *Saccharomyces rouxii*  
*(Zygosaccharomyces rouxii)* HUT7191 (IFO 0494), *Saccharomyces delbrueckii*  
 HUT 7116 (*Saccharomyces unisporus* IFO 0298), *Saccharomyces delbrueckii*  
*(Torulaspora delbrueckii)* HUT 7102, *Saccharomyces willianus* HUT 7106,  
*Zygosaccharomyces bailii* ATCC 11486, *Candida tropicalis* IFO 1403, and a  
 mutants thereof are suitable hosts. Addnl. claimed is a levodione  
 reductase gene derived from a microorganism belonging to the genus  
*Corynebacterium*, such as *C. aquaticum* AKU 611 (FERM BP-6448) or a mutant  
 thereof. Thus, when cells of *Saccharomyces cerevisiae* strain INVSci are  
 incubated with 5 g/L ketoisophorone for 17 h, 2.8 g/L levodione is  
 produced along with a trace of (4R,6R)-actinol and 0.65 g/L  
 (4S,6R)-actinol. After the same *Saccharomyces cerevisiae* strain had been  
 transformed with a \*\*\*levodione\*\*\* \*\*reductase\*\*\* gene from  
*Corynebacterium aquaticum* AKU 611, 5 g/L \*\*\*ketoisophorone\*\*\* was  
 reduced to 1.72 g/L levodione, 1.60 g/L (4R,6R)-actinol, 0.48 g/L

(4S,6R)-actinol and 0.27 g/L S-phorenol ((4S)-4-hydroxy-2,6,6-trimethyl-2-cyclohexen-1-one).

L5 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 4

ACCESSION NUMBER: 2004:41655 CAPLUS <<LOGINID::20061101>>

DOCUMENT NUMBER: 140:110201

TITLE: Process for producing phorenol

INVENTOR(S): Hoshino, Tatsuo; Tabata, Kazuyuki; Setoguchi, Yutaka; Shimizu, Sakayu

PATENT ASSIGNEE(S): Dsm Ip Assets B.V., Neth.

SOURCE: PCT Int. Appl., 14 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004005526	A1	20040115	WO 2003-EP4893	20030509
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2489761	AA	20040115	CA 2003-2489761	20030509
AU 2003240619	A1	20040123	AU 2003-240619	20030509
EP 1520029	A1	20050406	EP 2003-730004	20030509
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2005531320	T2	20051020	JP 2004-518497	20030509
US 2006121586	A1	20060608	US 2005-519969	20050930
PRIORITY APPLN. INFO.: EP 2002-14784 A 20020704				
WO 2003-EP4893 W 20030509				

OTHER SOURCE(S): CASREACT 140:110201

AB The present invention relates to a process for producing (4S)-4-hydroxy-2,6,6-trimethyl-2-cyclohexene-1-one (phorenol) from  
\*\*\*2\*\*\*, \*\*\*6\*\*\*, \*\*\*6\*\*\* - \*\*\*trimethyl\*\*\* - \*\*\*2\*\*\* -  
\*\*\*cyclohexene\*\*\* - \*\*\*1\*\*\*, \*\*\*4\*\*\* - \*\*\*dione\*\*\* (\*\*\*ketosiphorone\*\*\* ) comprising contacting \*\*\*ketosiphorone\*\*\* with a microorganism which is capable of producing actinol from levodione or with a cell-free ext. thereof, with a recombinant microorganism which is capable of producing actinol from levodione or with a cell-free ext. thereof, or with \*\*\*levodione\*\*\* \*\*\*reductase\*\*\*, and isolating the resulting phorenol from the reaction mixt.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 5 OF 5 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN

ACCESSION NUMBER: 2003-04837 BIOTECHDS <<LOGINID::20061101>>

TITLE: Production of a doubly chiral compound, (4R,6R)-4-hydroxy-2,2,6-trimethylcyclohexanone, by two-step enzymatic asymmetric reduction;

stereospecific trimethylcyclohexanone preparation by enzyme-catalyzed reaction

AUTHOR: WADA M; YOSHIKAZUMI A; NODA Y; KATAOKA M; SHIMIZU S; TAKAGI H; NAKAMORI S

CORPORATE SOURCE: Fukui Prefectural Univ; Kyoto Univ

LOCATION: Wada M, Fukui Prefectural Univ, Dept Biosci, 4-1-1 Kenjojima, Matsuoka, Fukui 9101195, Japan

SOURCE: APPLIED AND ENVIRONMENTAL MICROBIOLOGY; (2003) 69, 2, 933-937

ISSN: 0099-2240

DOCUMENT TYPE: Journal

LANGUAGE: English

AN 2003-04837 BIOTECHDS <<LOGINID::20061101>>

AB AUTHOR ABSTRACT - A practical enzymatic synthesis of a doubly chiral key compound, (4R,6R)-4-hydroxy-2,2,6-trimethylcyclohexanone, starting from the readily available 2,6,6-trimethyl-2-cyclohexen-1,4-dione is described. Chirality is first introduced at the C-6 position by a stereoselective enzymatic hydrogenation of the double bond using old yellow enzyme 2 of *Saccharomyces cerevisiae*, expressed in *Escherichia coli*, as a biocatalyst. Thereafter, the carbonyl group at the C-4 position is reduced selectively and stereospecifically by levorlone reductase of *Corynebacterium aquaticum* M-13, expressed in *E. coli*, to the corresponding alcohol. Commercially available glucose dehydrogenase was also used for cofactor regeneration in both steps. Using this two-step enzymatic asymmetric reduction system, 9.5 mg of (4R,6R)-4-hydroxy-2,2,6-trimethylcyclohexanone/ml was produced almost stoichiometrically, with 94% enantiomeric excess in the presence of glucose, NAD(+), and glucose dehydrogenase. To our knowledge, this is the first report of the application of *S. cerevisiae* old yellow enzyme for the production of a useful compound. (5 pages)

=> d his

L1 QUE (LEVODIONE(W) REDUCTASE)

FILE 'SCISEARCH, BIOSIS, CAPLUS, BIOTECHDS, IFIPAT, USPATFULL, LIFESCI, MEDLINE, BIOENG, EMBASE, ESIOBASE, WPIDS' ENTERED AT 13:36:40 ON 01 NOV 2006

L2 74 S L1  
L3 11 S (KETOISOPHORONE OR 2,6,6-TRIMETHYL-2-CYCLOHEXENE-1,4-DIONE) (  
L4 6 S (ISOPHORONE OR PHORENOL OR 4S-4-HYDROXY-2,6,6-TRIMETHYL-2-CYC  
L5 5 DUP REM L3 (6 DUPLICATES REMOVED)  
L6 3 DUP REM L4 (3 DUPLICATES REMOVED)

=> log y